

[Document's name] Abstract

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[Problems] To provide a membrane-electrode structure having an adhesive support layer that does not peel off from the solid polymer electrolyte membrane in a high-temperature high-humidity environment during the operation of a fuel cell.

[Solving means] The membrane-electrode structure includes the solid polymer electrolyte membrane 2 sandwiched by catalyst layers 3 and 4 positioned in the inner circumferential side thereof, and at least one face of the solid polymer electrolyte membrane 2 is coated with the catalyst layer 4 and the adhesive support layer 9. The adhesive support layer 9 is formed of an adhesive that has fluorine atoms in the molecular structure. The adhesive has a tensile elongation at break of 150% or more after curing. The adhesive contains a polysiloxane compound and a molecule containing at least two alkenyl groups. The electrode has diffusion layers 5 and 6 that coat the catalyst layers 3, 4 and the adhesive support layer 9, and the diffusion layer 6 coat the catalyst layer 4 and the adhesive support layer 9. One catalyst layers 3 and 4 is placed in the inner circumferential side of the other catalyst layers 4 and 3 with sandwiching the solid polymer electrolyte membrane 2.

[Selected drawing] Fig. 1